

PATENT SPECIFICATION

DRAWINGS ATTACHED

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International Classification:—H02f,g.

COMPLETE SPECIFICATION

Improvements in and relating to Plugs or Adaptors for Electrical Installations

I, JACQUES MICHEL BLANCHET, a French Citizen of 32, Avenue Galliéne, Le Vésinet, Seine-&-Oise, France, do hereby declare the invention, for which I pray that a patent may be granted to me and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to an improved plug or adaptor for use with an electrical installation utilising a cable of the type comprising two or more partly exposed conductors embedded in a slotted moulding of insulating material.

According to the present invention a plug or adaptor for an electrical installation comprises a body and a pin of insulating material having conductive hooks mounted thereon the said pin being longitudinally displaceable into and out of an appropriately situated aperture in a wall of the body.

A preferred embodiment of the invention will now be described with reference to the accompanying drawings, in which:—

Figure 1 shows in perspective a rear view of a plug or adaptor,

Figures 2, 3, 4 and 5 shows how the plug or adaptor is secured to conductors embedded in a cable moulding,

Figure 6 is an exploded perspective view of the parts making up the plug or adaptor,

Figure 7 is a vertical section across the line VII-VII of Figure 4,

Figure 8 is a transverse section made along the line VIII-VIII of Figure 7,

Figure 9 is a view of a modified form of the knurled ring shown in Figure, and

Figure 10 is an exploded perspective view of the parts making up a further form of plug.

The cable with which the plug or adaptor of the present invention is to be used is formed, as shown in Figures 2-5, from a moulding of insulating material and comprises a base 2 and two flanges 2a overlying

and substantially parallel to the base. A pair of conductors 1a are embedded in the underside 2c (Figure 3) of the flanges 2a so that the sides of the conductors facing the base 2 are exposed. The base 2 may be of dovetail section so that it can be readily secured to a similarly sectioned slot formed for example in a skirting board of a room.

A plug or adaptor according to the present invention and for use with the cable described above is also shown in Figures 1 to 5 and is generally indicated at 16. The plug or adaptor comprises a body 17 from the back of which projects a pin 18 of insulating material while a knurled ring 19 has part of its periphery projecting on two sides of the body 17. The pin 18 has two longitudinal grooves 18a in each of which is inserted a metal strip 20 whose end is bent back to form a hook 20a. The pin 18 and its associated hooks 20a are movable into and out of the plug or adaptor body in a manner to be described below.

When the plug or adaptor 16 is placed in the position shown in Figure 3, only a quarter turn is needed in order to introduce the edges of the hooks 20a opposite the conductors 1a in Figure 4. The pin 18 is connected to a mechanism controlled by the knurled ring 19, in such a manner that the pin, by a movement inside the plug or adaptor body 17 is turned inside the moulding so that the ends of the hooks 20a contact the conductors 1a. The plug or adaptor 16 is thus fixed in a firm position on the moulding. The hooks 20a are also connected with tubular contacts 21 (Figure 6 and 7) spaced at the distance apart of the pins of a standard appliance or lamp plug and corresponding to them are the apertures 22 in the cover 17a of the plug or adaptor 16.

The mechanism that operates the pin 18 is shown in greater detail by Figures 6, 7 and 8.

The pin 18 is integral with a transverse bar 18b having at each end two lugs which

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are intended to bear on a spiral ramp 19a formed on the inside surfaces of the knurled ring 19. The two ends of the ramp 19a are disposed 180° apart for engagement with lugs 18c. The ring 19 is placed between the base 17b and the cover 17a, it can thus be rotated but cannot be withdrawn axially.

The base 17b incorporates a hollowed extension 17c which guides the pin 18. The pin 18 is also hollow and encloses a spring 23 which makes contact through the end of the hollow pin 18 with the inside face of the cover 17a so that the lugs 18c are constantly bearing on the ramps 19a.

By turning the knurled ring 19 the pin 18 is made to slide and advances or withdraws the ends 20a in relation to the plug or adaptor body 17.

It is therefore possible to make a positive connection between the ends 20a and the conductors 1 in the cable as shown in Figure 8.

In addition in order to give some flexibility to the connection a resilient distance piece 24 can be placed between the plug or adaptor body 17 and the upper surface of the moulding 2.

When the hooks 20a are in full contact with the conductors 1a, the apertures 22 are coaxial with the tubular contacts 21, so that the pins of the appliance or lamp plug can be inserted therein.

To prevent the ring 19 moving when the lamp or appliance plug is engaged with the contacts 21, that is to say in order to prevent the hooks 20a being disengaged from the wires 1 whilst the circuit dependent on the plug or adaptor is alive, the ring 19 is completed by a base 19b (Figure 9) which contains a series of holes 19c, diametrically opposed in pairs corresponding to the distance between the contacts 21.

When the ring 19 has been positioned to allow the hooks 20a to connect with the conductors 1, the apertures 22 are in alignment with the contacts 21 so that when the pins of the appliance or lamp plug are passed there through it is not possible to turn the ring 19.

According to a variation (Figure 10) the movement of the pin 18 along its supports in the plug or adaptor body 17 can be effected by a screw 25 engaging with a threaded hole 18d in the pin 18 which is prevented from turning by the extensions 18e of the transverse bar 18b in the guide grooves 17d of the plug or adaptor body 17.

In order to obtain the same security as that given by the base 19b of the ring 19, the screw 25 has a fixed head 25a, the circumference of which has notches 25b spaced diametrically to correspond with the sockets 21.

In this case the cover 17a of the body is provided with a hole 17e for the screw 25.

Obviously the invention is not limited

solely to the embodiments described, and various modifications can be made within the scope of the appended claims.

WHAT I CLAIM IS:—

1. A plug or adaptor for an electrical installation comprising a body and a pin of insulating material having conductive hooks mounted thereon the said pin being longitudinally displaceable into and out of an appropriately situated aperture in a wall of the body.

2. A plug or adaptor as claimed in claim 1, wherein a laterally projecting lug provided on or rigidly secured to the pin bears against a spiral ramp provided in the plug or adaptor and rotatable relative to the pin.

3. A plug or adaptor as claimed in claim 2 wherein the spiral ramp is formed on the inside surface of a ring mounted in the plug or adaptor body to be rotatable about the pin.

4. A plug or adaptor as claimed in claim 1 wherein the body and the pin are provided with co-operating means which permits longitudinal displacement, but prevents rotation, of the pin relative to the body.

5. A plug or adaptor as claimed in any of claims 1-4, wherein the plug or adaptor is provided with a pair of apertures to receive the pins of an electrical appliance or lamp plug and with a pair of contacts for those pins, the contacts being in electrical connection each with one of the conductive hooks.

6. A plug or adaptor as claimed in claim 5, wherein the apertures are formed in a cover plate of the adaptor.

7. A plug or adaptor as claimed in claim 5 or claim 6, wherein the apertures are provided in a face plate on which the ring is formed as a circumferential flange.

8. A plug or adaptor as claimed in claim 7, wherein the apertures are one of a number of diametrically-opposed such pairs of apertures, thus allowing co-operation of the contacts for the pins of the electric plug or adaptor with a pair of apertures in a plurality of positions of the ring and face plate.

9. A plug or adaptor as claimed in claim 1, wherein the pin is spring-urged towards the position in which the hooks project from the body to the maximum extent.

10. A plug or adaptor as claimed in claim 4, wherein a screw-thread is provided in an internal longitudinal bore of the pin and co-operating with a screw having at its head a collar which bears against the body of the adaptor so that rotation of the screw will longitudinally displace the pin.

11. A plug or adaptor as claimed in claim 10, wherein the collar is provided with diametrically opposed pairs of apertures or peripheral notches any pair of which may co-operate with the pair of apertures in the cover plate.

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12. A plug or adaptor as claimed in any of claims 1 to 11, wherein the plug or adaptor is provided on the surface which bears against the cable moulding, with a resilient distance piece.
- 5 13. A plug or adaptor for an electrical installation substantially as described herein with reference to the accompanying drawings.

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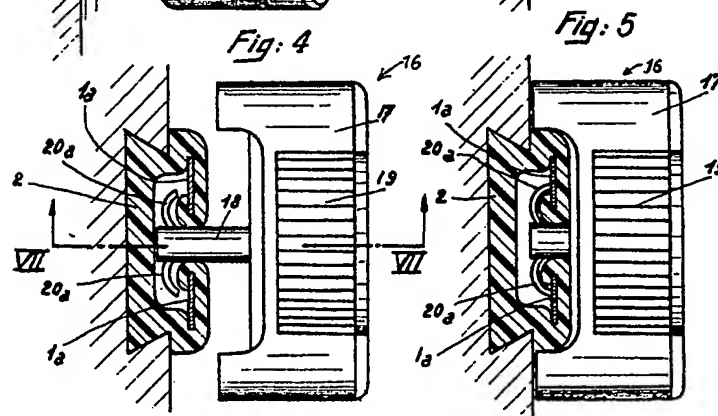
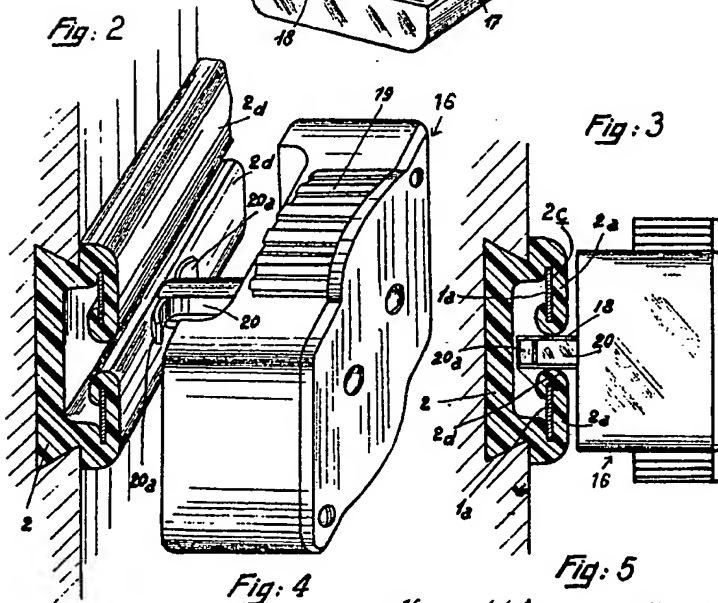
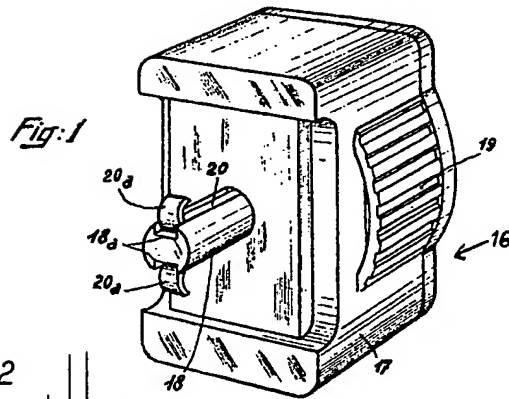
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SHEET 1



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Fig: 6

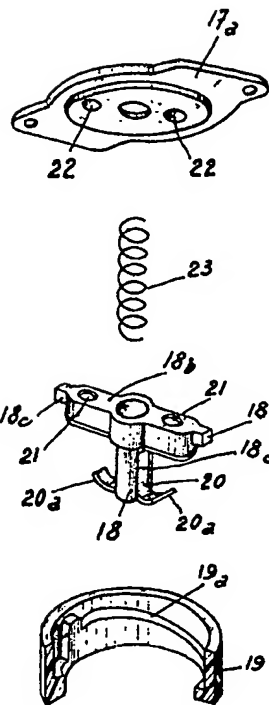


Fig: 7

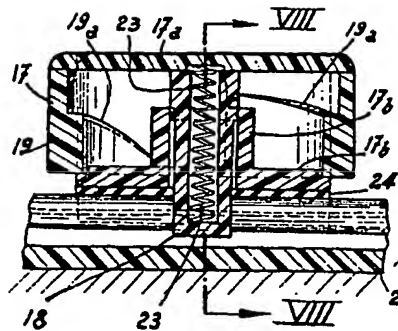
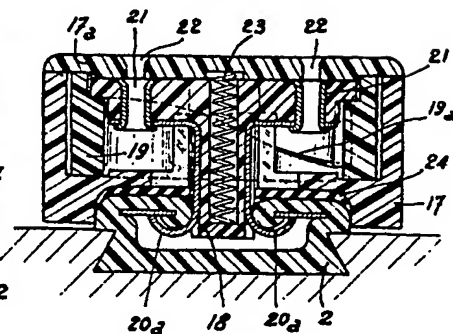


Fig: 8



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SHEETS 2 & 3

Fig: 10

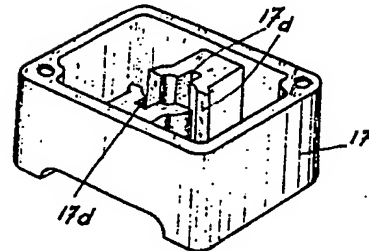
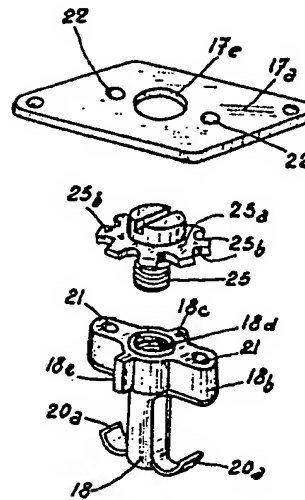
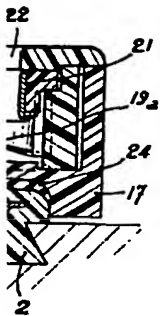
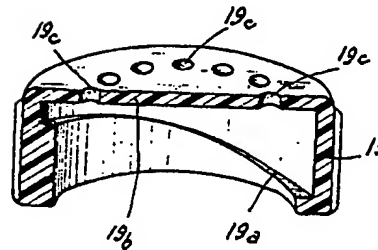


Fig: 9



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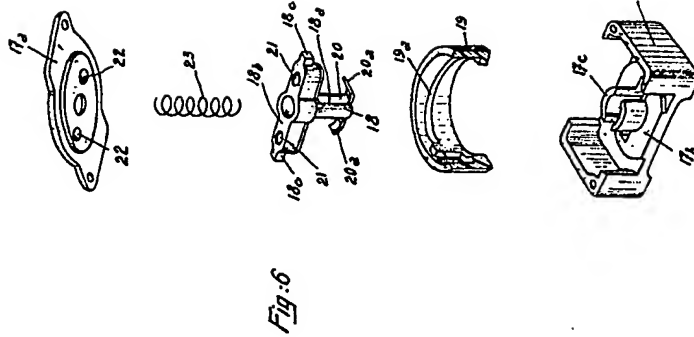


Fig. 6

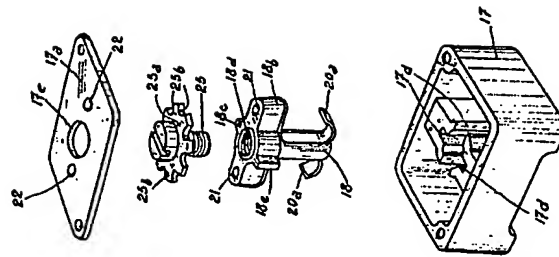


Fig. 10

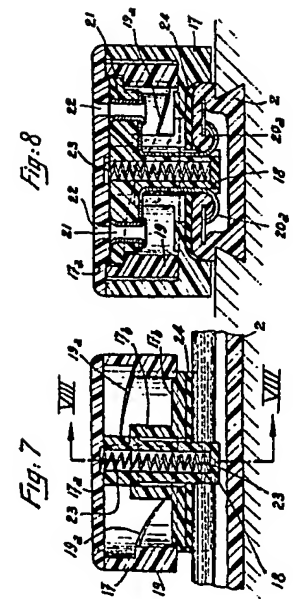


Fig. 7

Fig. 8

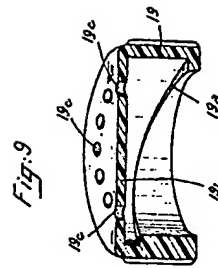


Fig. 9